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STUDIES ON NORTH AMERICAN APION: THE APION DISPARATUM GROUP (CURCULIONIDAE)¹

By D. G. KISSINGER, *University of Maryland, College Park*

Eight species resembling *A. disparatum* Sharp comprise a group that occurs from Southwestern United States to Venezuela. Nothing is known regarding the host plants of these species. Three distinctive characters of the group are the reddish or yellowish legs, the more or less evident spot of pubescence at the base of the third elytral interval, and the yellow beak of the male; the female beak is black as is true of most *Apion* species. The few species having yellow beaks, at least in the case of the male, namely *A. poeticum* Shp., *A. subauratum* Shp., *A. omissum* Wag., *A. luteirostre* Gerst., and *A. perminutum* Sm. may be distinguished from the *disparatum* group by the basal lateral expansion of the prothorax and/or the yellowish coxae. Additional characters are as follows:

Moderately robust to ovate in form; beak rather stout, nearly cylindrical, scarcely dilated at antennal insertion; ocular interval narrow, slightly narrower to slightly wider than dorsal tip of beak, eyes rather large, not prominent; prothorax not expanded laterally at base; third tarsal segment broadly bi-lobed; claws with acute basal tooth; tibiae and tarsi of male simple.

The males of two new species herein described, *A. schwarzi* and *A. bickleyi*, are distinct from all North and Central *Apion* because the middle coxae of these species bear an acute tubercle on the posterior ventral margin; the females of these species lack tuberculate coxae.

¹Scientific art. No. A601, contribution No. 2777 of the Maryland Agricultural Experiment Station, Department of Entomology; based in part on a thesis submitted to the Graduate School of the University of Maryland in partial fulfillment of the requirements for the degree of Master of Science.

KEY TO NORTH AMERICAN SPECIES OF *A. DISPARATUM* GROUP

1. Males2.
 Females9.
2. Middle coxae tuberculate3.
 Middle coxae simple4.
3. Beak as long as prothorax; beyond basal fifth pubescence on third elytral interval uniserial, size less than 1.75 mm.; Mexico.**schwarzi** n. sp.
 Beak one-fourth longer than prothorax; beyond basal fifth pubescence on third elytral interval irregularly biserial; size greater than 2.00 mm.; Mexico.**bickleyi** n. sp.
4. Beak as long as prothorax.5.
 Beak distinctly longer than prothorax.6.
5. Interspaces between punctures on dorsum of prothorax greater than diameter of punctures, finely alutaceous; pubescence of apical two-thirds of elytra extremely fine, dust-like; Guatemala.**seminudum** Wagner²
 Interspaces between punctures on dorsum of prothorax less than diameter of punctures; pubescence of elytra long, coarse, moderately dense and uniform; Mexico.**alloeum** n. sp.
6. Antennae inserted at distance from eye greater than width of ocular interval; elytra more elongate in form, about one-half longer than wide, as 3: 2.7.
 Antennae inserted at distance from eye equal to width of ocular interval; elytra more compact in form, not more than one-fourth longer than wide, as 9: 7.8
7. Elytra with brassy luster; prothorax not expanded laterally at base; pubescence on lateral surfaces slightly coarser and denser than that on dorsal surface, scutellum with feeble median, longitudinal furrow; Southwestern U. S. to Guatemala.....**disparatum** Sharp
 Elytra blue-black in color; prothorax noticeably expanded laterally at base; pubescence on lateral surfaces squamiform, much coarser and denser than that on dorsal surface, with more or less pearly luster; scutellum impressed transversely at apical third; Mexico and Nicaragua.**setifrons** Wagner
8. Beak one-third longer than prothorax; prothorax one-fourth to one-third wider at basal third than long; pubescence of elytra longer and finer; South Central Mexico**hirtum** Wagner
 Beak one-fourth longer than prothorax; prothorax two-fifths to one-half wider at basal third than long; pubescence of elytra shorter and coarser; extreme Southwestern U. S. and Baja Calif.**sectator** n. sp.
9. (1) Beak distinctly shorter than head and prothorax.....10.
 Beak not shorter than head and prothorax.....12
10. Beak as long as prothorax; elytral intervals with two rows of long, coarse scales; elytral length to width as 9: 5.5; Mexico**alloeum** n. sp.
 Beak distinctly longer than prothorax.....11.
11. Prothorax on dorsum with superficial, fine, sparse punctures; elytral length to width as 8.5: 5; Mexico**schwarzi** n. sp.
 Prothorax on dorsum with deep, moderately dense punctures; elytral length to width as 9: 7; extreme Southwestern U. S. and Baja Calif.**sectator** n. sp.
12. Antennae inserted at basal fifth of beak; beak polished beyond antennal insertion, sparsely finely punctate beyond middle; South Central Mexico.**hirtum** Wagner
 Antennae inserted at basal fourth of beak; beak dull in basal half, distinctly punctured

²Species placed in key from description.

- beyond middle. 13.
13. Beak about as long as head and prothorax combined, inserted in head so that dorsal margin from base of beak to vertex forms a nearly straight line; prothorax in side view feebly, evenly convex; Southwestern U. S. to Guatemala **disparatum** Sharp
 Beak distinctly longer than head and prothorax combined, inserted in head so that dorsal margin forms an obtuse angle with head; prothorax in side view somewhat gibbous anteriorly; Mexico. **bickleyi** n. sp.

Apion schwarzi new species

(Figure 12)

Holotype: male, Tampico, MEXICO, December 22, E. A. Schwarz collector, U. S. N. M. Cat. No. 62813.

Length: 1.56 mm.; width: 0.68 mm.

Moderately robust. Black, beak from antennal insertion to near tip, antennae, femora except for dark apical portion, and tibiae yellow; pubescence white, on dorsum of prothorax and elytra very fine and sparse, coarse and dense at base of third elytral interval, a few coarse scales at base of fourth through sixth intervals, sides of meso- and meta-thorax densely covered with coarse scales. Beak moderately slender, shorter than head and prothorax, equal in length to prothorax, very feebly curved, nearly cylindrical; feebly sculptured, basal third moderately punctured, pubescent, apical two-thirds bare, shining. Antennae inserted at basal two-sevenths of beak, at distance from eye slightly greater than width of ocular interval; first segment as long as next three; second segment stout, equal to next two; club 0.16×0.07 mm. Eyes large, not prominent; ocular interval a little narrower than dorsal tip of beak, with two rows of punctures separated by a narrow, flat interval. Prothorax at base one-fifth wider than long, at middle as wide as base, apex five-sixths as wide as base; sides not distinctly expanded laterally at base, nearly parallel in basal one-half, evenly rounding to apex, scarcely constricted at apex; feebly convex in profile; punctuation very shallow, fine, 0.02 mm. in diameter, rather sparse, interspaces about twice as great as diameter of punctures; basal fovea very shallow, short. Elytra at humeri one-fourth wider than prothorax at base, about 2.5 times as long as prothorax, length to width as 8.5: 5; intervals feebly convex, more than twice as wide as striae, nearly smooth, with a single row of fine punctures bearing very fine scales; striae moderately deep, fine. Front femora about three times as long as wide. Claws with blunt, basal tooth.

Special secondary sex characters: beak yellow from antenal insertion to near apex, middle coxae bear a small acute tubercle on posterior apex.

Allotype: female, same data as holotype, in (USNM).

Length: 1.66 mm.; width: 0.75 mm.

Beak black, slightly shorter than head and prothorax, one-fourth longer than prothorax, feebly curved, sparsely pubescent at base; first antennal segment as long as next four; middle coxae simple.

Two paratypes, same data as type, female (USNM), male (DGK). Do not exhibit any significant variation. Size range: 1.56 to 1.75 mm.

The small size and relatively short beak of both sexes and tuberculate middle coxae of male will easily separate this species from its allies.

This species is named in memory of E. A. Schwarz, an ardent collector and a keen student of the Coleoptera. His collection containing this

and many other interesting species of *Apion* is in the U. S. National Museum.

***Apion bickleyi* new species**

(Figures 2 and 9)

Holotype: male, Matamoros, MEXICO, May, A. Fenyés Collection, in California Academy of Sciences.

Length: 2.18 mm.; width: 1.12 mm.

Moderately robust. Black, apical three-fifths of beak excepting tip, antennae, femora, tibiae, and tarsi reddish-yellow; pubescence white, on dorsum of prothorax and elytra fine, sparse, coarse and dense at base of third elytral interval, several coarse scales at base of second, fourth and fifth intervals, coarse and dense on sides of meso- and meta-thorax. Beak moderately slender, distinctly shorter than head and prothorax, one-fourth longer than prothorax, moderately curved, basal two-fifths parallel, stouter, feebly expanded at antennal insertion, attenuate to apical two-fifths, thence nearly cylindrical to apex; basal two-fifths punctured and pubescent, apical three-fifths bare, feebly punctured. Antennae inserted slightly in front of basal third, at distance from eye one-half greater than width of ocular interval; first segment slightly longer than next three; second segment stout, equal to next two; club 0.18×0.08 mm. Eyes large, feebly prominent; ocular interval narrow, as wide as dorsal tip of beak, with several rows of coarse punctures, no median sulcus or flat area visible. Prothorax at base one-third wider than long, slightly wider at basal fourth, apex three-fourths as wide as base; sides with no basal lateral expansion, feebly expanded to basal fourth thence rounding to feebly constricted apex; profile moderately arcuate; punctuation moderately deep, 0.03 mm. in diameter, moderately sparse, interspaces irregular, slightly narrower to wider than diameter of punctures; basal fovea shallow, short. Elytra at humeri one-third wider than prothorax at base, 2.9 times as long as prothorax, length to width as 11: 8; intervals flat, more than twice as wide as striae, with one row of fine punctures bearing fine scales, third interval with two rows of punctures; striae moderately shallow, fine. Front femora 3.33 times as long as wide. Claws with acute basal tooth.

Special secondary sex characters: apical three-fifths of beak excepting tip yellow, middle coxae bear a small acute tubercle on posterior apex.

Allotype: female, same data as holotype, in (CAS).

Length: 2.37 mm.; width: 1.18 mm.

Beak black, slender, longer than head and prothorax, three-fifths longer than prothorax, moderately strongly curved; in dorsal view stouter and parallel in basal third thence attenuate to basal four-sevenths, apex slightly expanded; lateral view stouter in basal third thence feebly, irregularly attenuating to depressed apex; moderate punctures arranged in irregular rows throughout, median dorsal line impunctate, basal third finely, sparsely pubescent, surface rather dull, alutaceous, apex polished; middle coxae simple.

The large size and tuberculate middle coxae will separate the male from its allies; the dense spot of pubescence on the base of the third elytral interval contrasted by the very fine, scant pubescence on the remainder of the disc and the longer, slender, evenly arcuate beak set in head so as to form an obtuse angle with the front of the head should

distinguish the female.

This species is named in honor of Dr. William E. Bickley as an expression of my sincerest appreciation of his expert guidance so freely given me during this study. His sound advice and suggestions have contributed greatly to the completion of this paper.

***Apion disparatum* Sharp**
(Figures 3 and 7)

Apion disparatum Sharp, 1890, Biol. Centrali-Americana, Col., 4 (pt. 3); 75 [type: Guatemala City, GUATEMALA; British. Mus. (N. H.)]; Fall, 1918, Jr. N. Y. Ent. Soc., 26:222.

Apion nasutum Fall, 1898, Tr. American Ent. Soc., 25:161., [type: male, N. Mex.; Museum of Comparative Zoology No. 25108]. NEW SYNONYMY.

Length: 1.80 to 2.65 mm.; width: 0.88 to 1.25 mm. Moderately robust. Black, elytra with brassy luster, apical two-thirds of male beak excepting tip, first antennal segment, femora and tibiae except at base and apex yellow, remainder of antennae piceous. Pubescence conspicuous, white, on disc of prothorax and elytra fine, sparse, slightly coarser and denser at base of third elytral interval, coarse and dense on sides of meso- and meta-thorax, coarse and conspicuous at base of male beak, female beak more finely clothed at base. Beak moderately slender, feebly curved; of male shorter than head and prothorax, one-fifth to one-third longer than prothorax; in side view slightly expanded ventrally at antennal insertion, ventrally attenuating to middle thence nearly cylindrical to tip; dorsal view basal third nearly cylindrical, thence attenuating slightly to beyond middle and nearly parallel to tip; base with three fine rows of punctures bearing fine scales, shining, sparsely but distinctly punctured in apical two-thirds; of female black, as long as head and prothorax, three-fifths longer than prothorax, shining, basal fifth dull, alutaceous, with minute pubescence, apical four-fifths bare, sides with strong punctures arranged in irregular rows, becoming finer apically and dorsally except at base. Antennae inserted at distance from eye one-half greater than width of ocular interval, basal third of male beak, basal fourth of female; first segment equals next three; second segment stout, longer than third, shorter than next two; club 0.20×0.07 mm. Eyes large, not prominent; ocular interval narrow, about as wide as dorsal tip of beak, with two rows of punctures separated by a median, wide, shallow sulcus. Prothorax slightly wider at base than long, widest at basal one-third, apex four-fifths as wide as base; sides rounded to constricted apex; in profile noticeably convex, flatter apically and basally; punctures on dorsum 0.03 mm. in diameter, moderately deep, interspaces irregular but usually narrower than diameter of punctures; basal fovea linear, moderately deep, extending one-fourth length of prothorax. Elytra at humeri about one-half wider than prothorax at base, 2.6 times as long as prothorax, length to width as 10:7; intervals flat, twice as wide as striae, with one or two irregular rows of fine punctures bearing fine scales, transversely rugose; striae moderately deep. Front femora three times as long as wide.

A series of both sexes from California and Arizona differ somewhat due to the nearly straight beak, however the series from Santa Rita

Mts., Ariz., is composed of the typical and nearly straight beak form. In general there is considerable variation in the coarseness and density of the pubescence. Information regarding the bionomics and observations taken from reared series from areas throughout the range of the species are necessary to determine whether this is a single variable species or a complex.

The lectotype of *A. nasutum* Fall is hereby designated as the male specimen in the Fall Collection labeled N. Mex., M. C. Z. Cat. No. 25108. Lectoparatypes are in the J. L. Leconte Collections, M. C. Z. Cat. No. 887, one male labeled with orange paper and the U. S. National Museum, two males labeled Texas, Belfrage Collection, U. S. N. M. Cat. No. 4213.

Regarding the synonymy, the type of *A. disparatum* Sharp was not available for study but two females from the type locality determined by Sharp were compared with the type of *A. nasutum* Fall; they are synonyms.

Material examined: 50 specimens; type of *A. nasutum* Fall, 2 females of *A. disparatum* Sharp determined by Sharp.

Known distribution: UNITED STATES: Texas: Dallas (USNM), College Station (USNM) (DGK); New Mexico: Elk (UK), Albuquerque (USNM) (DGK); Arizona: Santa Rita Mts., 5 to 8,000 ft. (UK) (DKG), Douglas (CIS), Huachuca Mts., Miller Canyon (DGK); California: Palmerlee (DGK); MEXICO Durango: Palos Colorados (AMNH); Puebla: Puebla (CAS); Nayarit: Tepic (CAS) (DGK); GUATEMALA: Guatemala City (BMNH).

The more elongate form will distinguish this species from *A. hirtum* Wagner, the coarser and denser pubescence and aeneous luster of the elytra dorsum will separate this from *A. schwarzi* n. sp. and *A. bicklyi* n. sp.

***Apion alloceum* new species**

(Figures 4 and 13)

Holotype: male, Cuernavaca, Morelos, Mexico, Wickham collector, F. C. Bowditch Collection, in Museum of Comparative Zoology; one paratype, same data (MCZ). Length: 1.75 mm.; width: 0.69 mm.

Slender. Black, elytra faintly aeneous; beak from antennal insertion to near tip, antennae, and femora and tibiae with exception of extreme apex pale reddish-yellow; tarsi and claws light reddish-brown. Pubescence white with slight yellowish tinge, conspicuous, long, fine, rather dense, nearly uniform throughout, a little denser on anterior face of fore coxae and ventral surface of head. Male beak as long as prothorax or slightly shorter; slightly, evenly curved; nearly cylindrical, attenuate slightly toward apex, not expanded laterally at antennal insertion; basal third punctured and pubescent, apical third shining, nearly impunctate. Antennae inserted slightly distad of basal fifth of beak, at distance from eye three-fourths as great

as width of ocular interval; first segment slightly shorter than next three, second segment equals next two, club 0.18×0.07 mm. Eyes slightly prominent; ocular interval slightly wider than dorsal tip of beak, narrower than base of beak. Prothorax at base one-seventh wider than long, widest at basal third, apex three-fourths as wide as base; sides beyond slight basal lateral expansion slightly diverging to basal third thence rounding to feebly constricted apex; profile moderately convex; punctuation shallow, 0.02 mm. in diameter, interspaces less than width of punctures; basal fovea nearly lacking. Elytra at base one-fourth wider than prothorax at base, 2.6 times as long as prothorax, length to width as 18: 11; intervals flat, about three times as wide as striae; striae moderately deep, fine. Scutellum triangular, 0.04×0.04 mm., with moderate median basal impression. Front femora 3.2 times as long as wide. Claws with acute basal tooth.

Special male characters; beak yellow distad of antennal insertion with exception of extreme apex.

Allotype: female, Real de Arriba, Temescaltepec, Mexico, MEXICO, 19 VII 1932, H. E. Hinton, in California Academy of Sciences.

Beak of female equal to prothorax in length, feebly curved, scantily pubescent behind antennal insertion, glabrous distally, in lateral view nearly parallel sided throughout, in dorsal view tapering from antennal insertion to apex, distinctly depressed apically; moderately strongly and densely punctured, apical third polished, imountate.

The narrow form; long, fine, conspicuous pubescence; and short beak will distinguish this species.

***Apion setifrons* Wagner**

(Figures 1 and 8)

Apion setifrons Wagner, 1911, Mem. Soc. Ent. Belg., 19: 17.

Length: 2.46 mm.; width: 1.12 mm.

Moderately robust. Black, beak distad of antennal insertion with exception of extreme tip, first two antennal segments, and femora and tibiae except at extreme apex pale reddish yellow; remainder of antennae brownish yellow. Pubescence conspicuous on dorsal surface, white, fine, not appreciably denser at base of 3d elytral interval; on sides of pro-, meso-, and metathorax; ventral abdominal segments; and ventral surface of head very dense, coarse, squamiform with faint pearly luster; on lateral surface pubescence conceals derm, scales on elytra much finer than those on ventral surfaces. Male beak shorter than head and prothorax, one-fourth longer than prothorax; slightly curved, somewhat deflexed at middle; in lateral view nearly parallel in basal half, feebly narrowed and somewhat deflexed, apical third nearly parallel, two-thirds as wide as beak at antennal insertion; in dorsal view nearly parallel, throughout, feebly expanded at antennal insertion; basal two-fifths punctured in rows, with evident pubescence; apical two-fifths more finely, shallowly punctured, nearly glabrous. Antennae inserted at basal third of beak, at distance from eye one-half greater than width of ocular interval; first segment slightly shorter than next four, second segment equals next two; club 0.24×0.10 mm. Eyes large, feebly prominent; ocular interval slightly narrower than dorsal tip of beak, distinctly narrower than base of beak. Prothorax one-fifth wider at base than long, middle narrower than base; apex three-fourths as wide as base; sides beyond distinct basal lateral expansion feebly diverging to middle, rounded to constricted apex, widest at base; profile

feebly arcuate; punctuation moderately deep, 0.03 mm. in diameter, interspaces less than diameter of punctures, alutaceous; basal fovea very shallow, narrow, short. Elytra at humeri one-third wider than prothorax at base, 2.6 times as long as prothorax, length to width as 4: 3; intervals flat, slightly more than twice as wide as striae, with two rows of scales, alutaceous but not rugose; striae moderately deep, moderately fine. Scutellum triangular, 0.08 mm. long \times 0.06 mm. wide, apical third divided from basal two-thirds by a deep, transverse groove, basal two-thirds with broad, moderately deep, median longitudinal impression. Front femora 3.7 times as long as wide. Claws with acute basal tooth.

Special male characters: beak distad of antennal insertion yellow with exception of extreme apex.

The female of this species was not available for study. According to the original description the beak of the female is as long as the head and prothorax combined, moderately curved, cylindrical, from antennal insertion to apex glabrous and shining; the narrow forehead (ocular interval) with two rows of punctures, the middle carina extending as a smooth line to distal third of beak; the first segment of the antennae of the female as long as segments two through six combined. Wagner gives the length of this species as ranging from 2.3 to 2.5mm.

The determination of this species is based entirely on the original description. The species was described from two pairs in the Solari Collection. The single male available for study differed from the original description in that the beak is longer than the prothorax (originally described as equal to prothorax in length) and the last segment of the antennal funicle is as long as wide, not distinctly transverse as stated in the description.

Known distribution:

Type locality: NICARAGUA: Managua.

MEXICO: Vera Cruz: Cordoba (CAS).

***Apion hirtum* Wagner**

(Figures 6 and 11)

Apion hirtum Wagner, 1911, Mem. Soc. Ent. Belg., 19: 16.

Length: 1.70 to 2.00; width: 0.86 to 1.00 mm. Ovate, robust. Black, elytra with faint brassy luster, femora and tibiae except at base and apex yellow, female antennae yellowish at base, remainder piceous, male beak from basal third to near tip and first segment and club of antennae yellow, remainder of antennae dark reddish-yellow; pubescence white, or dorsum of prothorax and elytra moderately fine, conspicuous, sparse, coarser and denser at base of third elytral interval and on sides of meso- and meta-thorax; male head and beak more conspicuously pubescent. Beak moderately slender, feebly curved, feebly expanded laterally at antennal insertion; of male one-third longer than prothorax, shorter than head and prothorax, in dorsal view attenuate from slight basal expansion to middle thence nearly parallel to tip; in lateral view nearly cylindrical beyond antennal insertion, tip about one-half as wide as base; basal third with several rows of strong punctures bearing scales, apical

two-thirds glabrous, shining, sparsely, feebly punctured; of female slightly shorter to slightly longer than head and prothorax, one-half to two-thirds longer than prothorax, in dorsal and lateral view similar to male, somewhat depressed toward apex, basal fourth dull, with several rows of strong punctures bearing fine scales, apical three-fourths glabrous, polished, punctures laterally moderately dense, coarse, becoming sparser and finer apically and dorsally, apical one-fourth nearly impunctate. Antennae inserted at distance from eye equal to width of ocular interval, at basal fifth of beak; first segment of male equal to next two, of female about equal to next three; second segment of male shorter than next two, of female equal to next two; club from 0.22×0.08 to 0.24×0.09 mm. Eyes rather large, not prominent; ocular interval moderately wide, slightly wider in female, in both sexes distinctly wider than dorsal tip of beak; with flat median area, sometimes with short, indistinct median impressed line. Prothorax one-fourth to one-third wider at base than long, widest at basal one-third, apex four-fifths as wide as base; sides with no basal lateral expansion, moderately diverging to basal third, rounded and converging to constricted apex; in profile feebly convex, slightly more arcuate at basal third; punctation deep, moderate, 0.03 mm. in diameter, dense, interspaces less than diameter of punctures, alutaceous; basal fovea narrow, short, deep. Elytra at humeri two-fifths wider than prothorax at base, from 2.5 to 2.75 times as long as prothorax, length to width as 9: 7; intervals nearly flat, twice as wide as striae, transversely rugose, with two irregular rows of fine punctures bearing fine scales, striae moderately deep, fine. Fore femora three and one-half times as long as wide.

Material examined: 3 males, 3 females.

Known distribution: described from "Mexico." MEXICO: Mexico: 37 mi. S. Mexico City. Puebla: 35 mi. S. Puebla. A pair in (BMNH) (DGK) (USNM).

***Apion sectator* new species**

(Figures 5 and 10)

Length: 1.56 to 1.80 mm.; width: 0.75 to 0.93 mm.

Robust. Black, elytra with more or less distinct aeneous luster; antennae at base, antennal club of male, femora with exception of extreme base and apex, and male beak from antennal insertion to near tip pale reddish yellow, hind femora tend to be darker, tibiae dark castaneous. Pubescence white conspicuous, coarse, moderately sparse, somewhat coarser and denser on sides of pro- meso- and metathorax. Male beak one-fourth longer than prothorax, moderately, evenly curved; subcylindrical, in dorsal view feebly expanded laterally at antennal insertion, tip as wide as ocular interval, in lateral view tip three-fourths as wide as base; basal two-thirds moderately densely, strongly punctured, pubescent behind antennal insertion, tip smooth, impunctate. Female beak four-fifths as long as head and prothorax combined, two-fifths longer than prothorax, nearly cylindrical throughout, slightly depressed toward apex, polished beyond antennal insertion, rather coarsely punctured becoming finer dorsally, tip smooth. Antennae inserted at distance from eye equal to width of ocular interval, of male slightly distad of basal fourth of beak, of female at basal fifth; first segment of male equals next two, of female equals next three; second segment of male shorter than next two, of female equal to next two; club 0.18×0.08 mm. Eyes slightly prominent; ocular interval of female slightly wider than dorsal tip of beak, of male equal to dorsal tip of beak. Prothorax widest at basal third,

there from two-fifths to one-half wider than long, at base one-fourth wider than long, middle narrower than base, apex about four-fifths as wide as base; sides beyond slight basal lateral expansion diverge to basal third thence rounding to constricted apex; in profile feebly arcuate; punctation deep, 0.03 mm. in diameter, interspaces generally less than diameter of punctures, moderately strongly alutaceous; basal fovea fine, deep extending about one-fourth length of prothorax. Elytra at humeri one-third wider than prothorax at base, 2.4 times as long as prothorax, length to width as 9:7; intervals flat, twice as wide as striae, interval somewhat wider, with one row of scales, 3d with two rows, scales forming more or less distinct spot at base of 3d interval; striae moderately deep, moderately fine. Scutellum 0.06, \times 0.06 mm., not furcate. Front femora about 3.4 times as long as wide. Claws with acute basal tooth.

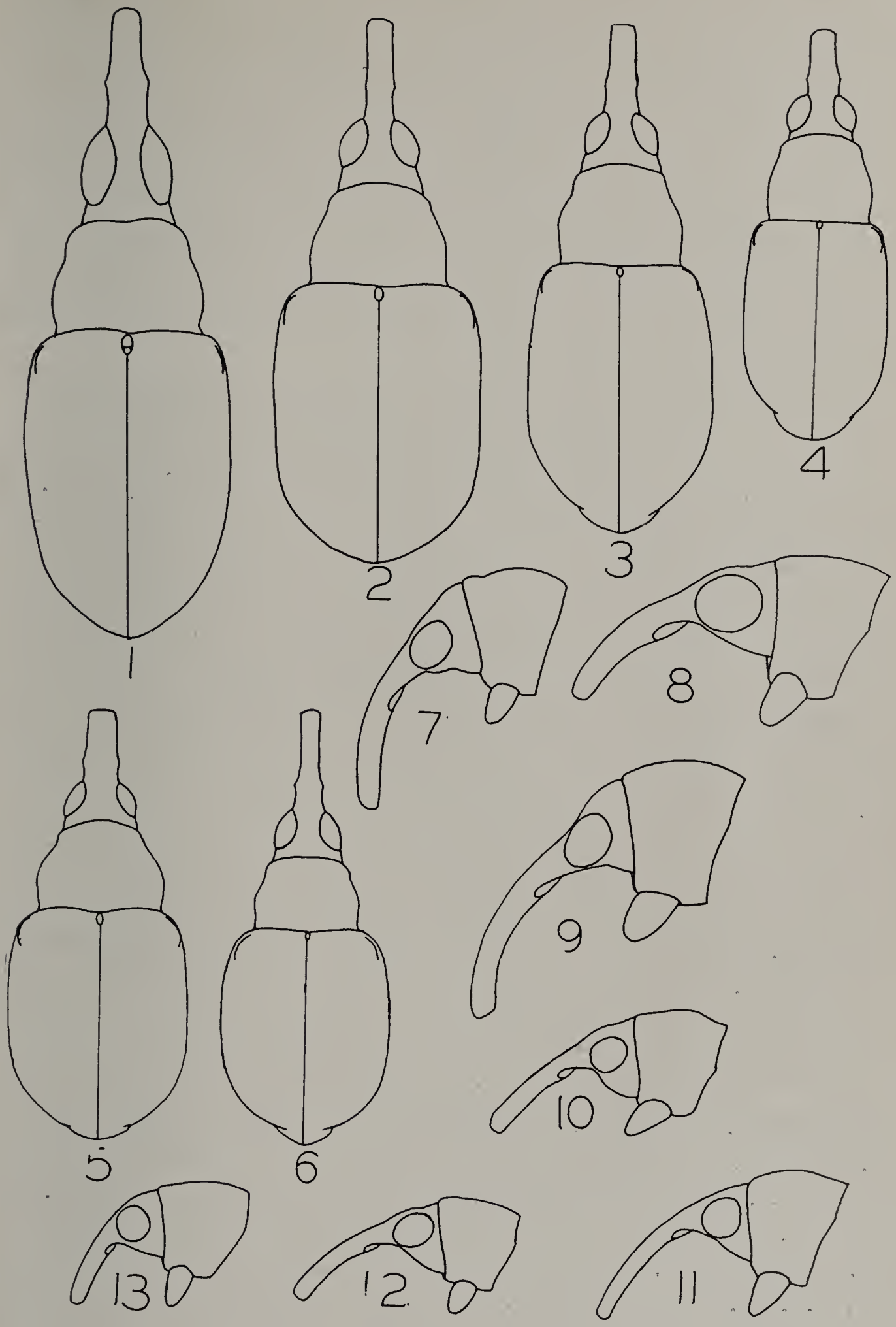
Special male characters: beak in apical three-fourths with exception of extreme apex reddish-yellow.

Holotype: male, 20 mi. N. Comondu, Lower California, MEXICO, July 23, 1938, Michelbacher and Ross Collectors, in California Academy of Sciences. Allotype: female, same data as holotype (CAS). Forty-four paratypes: same data as holotype 2 (BMNH), 2 (CNC), 8 (DGK), 2 (UK), 2 (UMD), 2 (USNM), 7 (CAS); 2 Porto Ballandra, Carmen Is., Gulf Calif., 21 V 1921, E. P. Van Duzee Collr. (CAS); 3 45 mi. N. San Ignacio, L. Calif., 27 VII 1938 (CAS); 1 10 mi. S. Catavina, L. Calif., 29 VII 1938, Michelbacher and Ross Collrs. (CAS); 1 15 mi. N. El Refugio, L. Calif., 4 VII 1938, Michelbacher and Ross (CAS); 4 San Felipe, L. Calif., Beyer, Fenyas Colln. (CAS); 1 San Francisquito Bay, Gulf Cal., 10 V 1921 E. P. Van Duzee Collr. (CAS); 1 San Nicolas Bay, Gulf Cal., 16 V 1921, E. P. Van Duzee Collr (CAS); 1 El Taste, L. Calif. (MCZ #29527); 2 Cocospera Canyon, 8 mi. E. Imuris, Sonora, MEXICO, 2 VII 1952, P. & C. Vaurie (AMNH); 1 Base of Pinal Mts., Gila Co., Arizona, D. K. Duncan, July, 1930, Edith W. Mank Colln. (CU); 2 Chiric. Mts., 3 VIII 1932 (MCZ #29537).

Known distribution: UNITED STATES: Arizona: Chiricahua Mts.; Gila Co. MEXICO: Sonora: 8 mi. E. Imuris. Baja California: Catavina, Comondu, San Felipe, San Francisquito Bay, San Ignacio, San Nicolas Bay.

The short robust form of the prothorax and elytra; the coarser, more uniform dorsal pubescence; and the short beak, especially of the female, distinguish this species from *A. hirtum* Wagner, to which it is very

Figure 1 dorsal view of male *A. setifrons* Wagner. Figure 2 the same of male *A. bickleyi* new species. Figure 3 the same of male *A. disparatum* Sharp. Figure 4 the same of male *A. alloeum* new species. Figure 5 the same of male *A. sectator* new species. Figure 6 the same of male *A. hirtum* Wagner. Figure 7 lateral view of head and prothorax of female *A. disparatum* Sharp. Figure 8 the same of male *A. setifrons* Wagner. Figure 9 the same of female *A. bickleyi* new species. Figure 10 the same of female *A. sectator* new species. Figure 11 the same of female *A. hirtum* Wagner. Figure 12 the same of female *A. schwarzi* new species. Figure 13 the same of male *A. alloeum* new species.



See p. 78 for explanation of figures.

closely related. The short beak of the female, the robust form and reddish legs separate the female from *Apion varicorne* Smith with which it may be confused.

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OCTOTOMA GUNDLACHI MINING LANTANA LEAVES IN CUBA

By PATRICIA VAURIE¹

The chrysomelid, *Octotoma gundlachi* Suffrian, a small, flat, shining, purplish-black, heavily sculptured beetle of the subfamily Hispinae, was found mining leaves of a *Lantana* plant on a hillside at Topes de Collantes in the province of Las Villas, Cuba, on July 17, 1956. This locality is 17 kilometers north of the old colonial town of Trinidad on the southern coast, at about 3,000 feet of altitude. Ten individuals were taken from the same plant, one of these being captured just as it was emerging from its little brown pocket in the leaf. A few other plants nearby were inspected but no beetles were seen on them. The other specimens were taken a week earlier at the western tip of Cuba on the Peninsula of Guanahacabibes, but I do not remember in what situation. This is the only species of the genus reported in Cuba and probably occurs all over the island although I have seen but one other specimen (in the collection of the American Museum of Natural History, New York), which is from the eastern end of the island, from Cristo, north of Santiago, in Oriente Province.

In some countries, notably Hawaii, the prettily flowered *Lantana* bush becomes a noxious plant and means for its control have been sought through parasites. Dr. N. L. H. Krauss has told me in a recent letter that he had introduced into Hawaii, among other control insects of various families, a Mexican species of the same genus, *Octotoma scabripennis* Guérin, which attacks *Lantana* in the same way as *gundlachi*. He believes there may be other species of *Octotoma* that attack different species of *Lantana* in tropical America. Dr. Krauss had also seen *gundlachi* mining in *Lantana* in Cuba, at Bosque de Habana in Havana and in Viñales Valley in Pinar del Rio Province, but he had not found it numerous enough for his purposes.

¹American Museum of National History.